zon assigned to a specimen of *Eurypterus pennsylvanicus*, found 72′ + top of Pithole well, Venango county, Pennsylvania, which places it 167′ above top of Pithole (Berea) grit struck in the well; therefore, a considerable distance *beneath* the Garland or Olean (Pottsville conglomerate bottom member) conglomerate. In Proceedings American Philosophical Society, Vol. XVI, page 621, its horizon is wrongly made to be *above* the Garland conglomerate, and therefore in the Pottsville conglomerate No. XII. Mr. Lesley remarked that Prof. James Hall's description of this and other Eurypterids, beautifully drawn by Mr. Simpson of Albany, was about to be published in Report of Progress, P. 3, of the Second Geological Survey of Pennsylvania.

Mr. Blazius read a paper on the unhealthy conditions of certain portions of great cities, produced by prevalent winds from certain quarters, and on the necessity for providing for their inhabitants means of rapid transit to and from the surrounding country.

Pending nominations Nos. 1012 to 1022, were read.

And the meeting was adjourned.

Obituary Notice of Strickland Kneass. By Frederic Graff.

(Read before the American Philosophical Society, March 21, 1884.)

On the morning of January 14, 1884, one of the valued members of this Society, Mr. Strickland Kneass, died at his residence in this his native city. We realize with sincere regret the loss of one intimately identified with the local affairs of this city, and the valuable railroad interests of the State connected therewith, and present this brief sketch of his life, as a record of a worthy and useful man.

Mr. Kneass was born July 29, 1821. His father, Mr. William Kneass, was an engraver of some note, and for several years employed in that capacity by the Government in the Mint in this city.

Mr. Kneass obtained his early education under the care of Mr. James P. Espy, who was one of the first to devise and suggest the present methods of anticipating changes in the weather, though from the lack of telegraphic communication at that time they fell short of the completeness that they have since attained.

After leaving school Mr. Kneass decided to adopt the profession of Civil

Engineer, and an opportunity soon offered for the commencement of his practical training as such, under the care of his elder brother, Mr. Samuel H. Kneass, assisting in the surveys then making for the Delaware and Schuylkill Canal, and later took part in the surveys and construction of the Philadelphia and Wilmington Railroad.

Upon completion of this road, wishing to become grounded in the scientific part of engineering, he became a student in the Rensselaer Polytechnic Institute, at Troy, New York, whence he graduated, in 1839, as Civil Engineer, taking the highest honor.

Soon after this Mr. Kneass was made assistant engineer and topographer on the State survey for a railway between Harrisburg and Pittsburgh ; he then became draughtsman in the Naval Bureau of Engineering at Washington, and was afterward employed by the British Commission in preparing the maps of the northern boundary, between the United States and the Provinces ; and subsequently, by the Federal Government on the general map of the boundary survey.

At a later date, 1869, he was appointed, jointly with Colonel James Worrall, a commissioner to settle the boundary between Pennsylvania and Delaware. The location of this line permanently and correctly (an arc of a circle of about twelve miles radius) required great care, for the accomplishment of which Mr. Kneass's remarkable thoroughness peculiarly fitted him. The proposed line was not accepted by the Delaware commission.

In 1847, Mr. J. Edgar Thomson, Chief Engineer, selected Mr. Kneass as one of his assistants in conducting the preliminary surveys, which resulted in the construction of the Pennsylvania Railroad. He was soon promoted to the position of Principal Assistant Engineer, and engaged in the construction of that part of the road from "Jack's Narrows" to Tyrone, including nine bridges and Tussy Mountain tunnel.

Under his supervision, and from his designs, the first shops and engine house at Altoona was erected.

The construction of the road from Altoona to the summit of the Alleghenies was a work of much difficulty, and called forth engineering ability of a very superior order, in the accomplishment of which Mr. Kneass proved himself fully capable. We must remember that at that time none but hand-drills were used in rock excavation and tunneling, and no high explosives or steam excavators employed.

In 1853, he resigned to accept the position of associate engineer with Mr. Edward Miller, Chief Engineer of the North Pennsylvania Railroad, in which capacity he remained two years, leaving to accept the office of Chief Engineer and Surveyor of the consolidated City of Philadelphia, to which position he was elected by Select and Common Councils, March 29, 1855, and subsequently re-elected three times, namely, April 12, 1860; April 12, 1865, and April 14, 1870, each for a term of five years.

Mr. Kneass's services in the Department of Surveys were of great value. The City proper and the seven adjoining Districts were, up to 1855, en-

tirely distinct and separate corporations, each having its own boards, officers, surveyors and engineers, working without any concert of action, or connected fixed plans either of grades, standard of measures, or designs of sewerage. Even the records of the old Districts were deposited indiscriminately in a City warehouse, and had to be collected, arranged and classified.

It therefore became necessary to establish a general plan of grades, sewers, &c., &c., that would combine as far as possible the disjointed work previously done. To this task Mr. Kneass applied himself with all his energy, engineering knowledge, experience and capacity for classification,

Maps were made of the whole area of the consolidated City, from which the grades were adjusted, the drainage areas carefully computed, and a standard of size for sewers established, that was intended to be useful not only for the sewers built whilst he was in office, but which amply provided for the entire future drainage system of the City.

Up to 1865, there was no record or plan by which the ownership or dimensions of an individual property could be ascertained. Under an Act of Assembly, passed March, 1865, Mr. Kneass organized and put into successful operation, what is known as the Registry Bureau. By an exceedingly simple system of plans, and records, arranged in book form, the information in regard to any individual property can be obtained in a very few minutes. The record is of very great value and importance to the general public, and exceedingly useful in getting data for an equal assessment of taxes, to effect which object the Act of Assembly was mainly intended.

The method devised and employed has since been adopted by other cities, without any attempt to improve upon it.

During Mr. Kneass's term of office several very important bridges were required to be built across the Schuylkill at various points, the first and most important being at Chestnut street.

In 1857, Councils advertised for designs for a bridge at that street, and appointed a Commission, consisting of J. Edgar Thomson, Ashbel Welch, and John C. Cresson, to decide upon the merits of the designs, which were all presented anonymously, being simply distinguished by the private marks of the designers.

Mr. Kneass considered it his duty to present a plan, and did so in the manner described above. This plan was fully approved by the Commission, and recommended to Councils for adoption.

The design was for the cast iron-arch bridge, essentially as erected, except in respect to the width of roadway, and length of the approaches; in regard to which the suggestions, and first plans of the engineer and surveyor were not adopted by Councils, because of the increased expense, a matter much to be regretted, now that the traffic has increased so much beyond that anticipated by Councils, but foreseen by Mr. Kneass.

This is believed to have been the first cast-iron arch bridge constructed in this country.

The location of the bridge, and particularly its western abutment and approaches, presented some difficulties of construction, but were believed to have been fully guarded, and at the time considered by the board of commissioners and all connected with the work as ample to insure its permanency.

In 1866, a commission was appointed by an Act of Assembly to build a bridge across the Schuylkill at South street, under the general supervision of Mr. Kneass, as Chief Engineer and Surveyor. The plans received from a number of bridge builders were referred by the commission to Mr. Kneass, who reported upon their relative merits, and recommended that submitted by John W. Murphy, with certain important modifications ; among them the substitution of iron girders and cast-iron piers for the stone and brick arches over the marsh on the west side of the river. These suggestions were at first fully approved by the commission, but by subsequent action his advice was neglected, and the erection of the brick arches which he had condemned, and which have since failed, show their error in not being guided by the Chief Engineer and Surveyor.

In April, 1869, under direction of Councils, plans of a bridge were called for at Powelton avenue, or Bridge street. Mr. Kneass recommended the site of the old wire suspension bridge at Callowhill street, and a double roadway truss bridge. The general plans for such a structure were approved October, 1868, but owing to the tardy action of Councils in authorizing a loan, and making the appropriation, the contracts for the bridge were not fully entered into, and the work commenced, until after he had resigned his position ; but the original designs were fully carried out by his successor.

During the war, in 1862, in company with the late Colonel C. M. Eakin, he was engaged in making reconnoissance of the military approaches to the city, extending along the Susquehanna river, from Duncan's Island to Havre de Grace. The work in the field and accompanying maps were highly useful at the time of Lee's last raid into Pennsylvania. This report, with the maps, are now deposited in the office of the Department of Surveys.

Mr. Kneass built the first street passenger road (the Fifth and Sixth or Frankford and Southwark) put in operation in this city, and then devised and established the form of tram rail, now used on all similar roads in this country. He subsequently acted as chief engineer of a number of the passenger roads of the city.

In 1871, Mr. Kneass was selected as one of two engineers to make a survey, and report upon the best means of draining or culverting Jones Falls, Baltimore, Md.

During Mr. Kneass term of office he was officially one of the Board ot Commissioners of Fairmount Park, and rendered essential service in that capacity; his knowledge of the ground covered by the Park and its surroundings being very useful.

April 12, 1872, Mr. Kneass resigned his position as Chief Engineer and

Surveyor to accept the post of assistant to President J. Edgar Thomson, of the Pennsylvania Railroad, and subsequently occupied the same position under Thomas A. Scott, and Mr. George B. Roberts, the present President. In connection with this office he served as President of the following companies, viz.:

Belvidere and Delaware Railroad Co.
Columbia and Port Deposit Railroad Co.
Freehold and Jamesburg Agricultural Railroad Co.
Lewisburg and Tyrone Railroad Co.
Mifflin and Centre County Railroad Co.
Philadelphia and Trenton Railroad Co.
Pomeroy and Newark Railroad Co.
Philadelphia and Long Branch Railroad Co.
River Front Railroad Co.
New Jersey Warehouse and Guarantee Co.
Cressons Springs Company.

He was also a Director in forty-four of the companies identified with the Pennsylvania Railroad.

Mr. Kneass was a member of the American Philosophical Society, the Franklin Institute, the Historical Society, the American Society of Civil Engineers, and the Engineers' Club of Philadelphia, of which Club he was President during the year 1881.

He was one of the early members of the Union League, of this city, and one of its Board of Directors from December, 1879, to December, 1883.

Mr. Kneass was married, in 1853, to Margaretta Sybilla, granddaughter of the Hon. George Bryan, of the Supreme Court of Pennsylvania.

Mr. Kneass was a sincere Christian, a member of the Seventh Presbyterian Church; in 1856 was elected a member of its Board of Trustees; acting as Secretary until 1872, when he became President. His principles of honor were of the highest character, always just and impartial; as a public officer, most carefully guarding the interests of his employers, whilst at the same time he was mindful of the rights of employés. A warm and reliable friend, kind and generous, his sound judgment caused him to be looked up to by those requiring his advice. His manner was courteous to all, inspiring respect from those with whom he was associated.

Note on a possible Geographical Meaning for the Set Griffin. By J. P. Lesley.

(*Read before the American Philosophical Society, Jan. 4th, 1884.*)

This chimerical animal sits on his haunches, with ears and tail erect, his breast and fore legs being vertical; his back slopes at 45°, and the end of his vertical straight tail is on a level with his head, so that the whole figure resembles a capital Roman letter N.